Challenge TB - Zimbabwe

Year 2

Annual Report

October 1, 2015 – September 30, 2016

November 4, 2016

Cover photo: Women from Danangwe Mining Cooperative wait for their turn to be screened for TB during the targeted screening for active TB campaign in Mashonaland West Province. (Credit: Paidamoyo Magaya)

This report was made possible through the support for Challenge TB provided by the United States Agency for International Development (USAID), under the terms of cooperative agreement number AID-OAA-A-14-00029.

Disclaimer
The authors' views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

Table of Contents

List of Tables

List of Figures

List of Abbreviations and Acronyms

ACF	Active case finding
APA	Annual Plan of Activities
APHL	Association Public Health Laboratories
ART	Antiretroviral Therapy
CBOs	Community based organizations
CDC	Center for Disease Control
CCM	Country Coordinating Mechanism
CI	Contact Investigation
CTB	Challenge TB
DHIS 2	District Health Information System 2
DM	Diabetic Mellitus
DRS	Drug Resistance Survey
DR-TB	Drug-resistant Tuberculosis
DST	Drug Susceptibility Testing
EMA	Environmental Management Agency
EPMS	Electronic patient monitoring system
ETRR	Electronic TB Recording and Reporting system
GF	Global Fund
HCWs	Health Care Workers
HIV	Human Immunodeficiency Virus
IEC	Information, Education and Communication
IMDP	International Management Development Programme
IRD	Interactive Research and Development
ITHC	Integrated TB-HIV Care
IPT	Isoniazid Preventive Therapy
KAP	Knowledge, attitudes and practices
KNCV	KNCV Tuberculosis Foundation
LPA	Line Probe Assay
LQMS	Laboratory Quality Management System
MDR-TB	Multidrug-resistant Tuberculosis
M&E	Monitoring and Evaluation
MOHCC	Ministry of Health and Child Care
MPWNH	Ministry of Public Works and National Housing
NAP	National AIDS Program
NFM	New Funding Mechanism
NSP	National Strategic Plan
NTBRL	National Tuberculosis Reference Laboratory
NTP	National Tuberculosis Control Program
OR	Operations Research
PMDT	Programmatic Management of Drug Resistant Tuberculosis
PMU	Programme Management Unit
RR	Rifampicin Resistant
R&R	Recording and Reporting
SLMTA	Strengthening Laboratory Management Towards Accreditation

TA	Technical Assistance
TB	Tuberculosis
TB-DRS	Tuberculosis drug resistance survey
The Union	International Union Against Tuberculosis and Lung Disease
USAID	United States Agency for International Development
USG	United States Government
WHO	World Health Organization

1. Executive Summary

Challenge TB (CTB) and the Global Fund (GF) are the two major funders of the national Tuberculosis (TB) response in Zimbabwe. CTB is a five year funding mechanism from United States Agency for International Development (USAID) which began in October 2014 as a successor to TB CARE I. The lead partner in Zimbabwe is the International Union Against Tuberculosis and Lung Disease (The Union), with KNCV Tuberculosis Foundation (KNCV), World Health Organization (WHO) and Interactive Research and Development (IRD) as collaborating partners. The total budgeted amount for Year 2 was $5,997,824.

In Year 2, CTB supported activities on a national scale with selected key interventions targeting 37 districts in 6 provinces. The interventions in the annual plan of activities in year 2 (APA2) built on progress made in Year 1 guided by the CTB strategic framework derived from national priorities.

The following are the key outcomes/achievements from APA2 support:

- CTB supported a survey to assess the community's knowledge, attitudes and practices towards TB in five provinces of the country. The survey revealed that the knowledge about TB was low and levels of stigma significantly high. Only 16% of the population had comprehensive knowledge about TB while 81% perceived they were not adequately informed about TB. In addition, 75% were not aware of Drug Resistant TB (DR-TB) and 51% would avoid people with TB. Communities in rural areas preferred getting information on TB from health care workers (HCWs) and community health workers whereas urban communities preferred radios and televisions. These key findings and recommendations informed the development of the national communication strategy for TB supported by CTB.

- CTB supported the customization of District Health Information Software 2 (DHIS2), an electronic recording and reporting software to enable reporting of TB surveillance data in real time. A total of 185 HCWs (127 males; 58 females) were trained to use the software for data entry and analysis. CTB also supplied 75 laptops to all provincial and district TB coordinators to facilitate roll-out. Within four months of implementation, 1,569 (95%) out of 1,657 health facilities had their 2015-2016 data entered into the system. The TB data entered are available online and in real time to provincial and national managers, hence a remarkable improvement in the timeliness and accessibility of data. The managers can now generate site specific data analysis reports, including comparisons over time, across facilities, districts and provinces. This has made it much easier for managers to identify underperforming facilities and districts and to prioritize them for support.

  CTB supported the mapping and prioritization of districts with a high risk for TB in Zimbabwe to inform targeted screening for active TB among high risk communities. The first six priority districts in three provinces were covered over two months. A total of 11,870 people were screened for TB among which 4931 (42 %) were presumed to have TB based on a chest X-ray suggestive of active TB and/or positive symptom screen. All identified presumptive TB cases had sputum collected and examined with either smear microscopy of Xpert MTB/RIF.
- A total of 4,931 (42%) presumptive TB clients were identified, among whom 185 (4%) were diagnosed with TB. Of these 31 (17%) were bacteriologically confirmed, drug-sensitive; 151 (82%) clinically diagnosed. A total of 3 (2%) cases had Rifampicin Resistant (RR)/MDR-TB strains. All patients diagnosed were followed up by the local nurses and the District TB Coordinators for initiation on appropriate treatment. In addition, all clients screened for TB were offered HIV testing services and 1,296 were already HIV positive patients on anti-retroviral treatment (ART). In total 6,854 who did not know their status were tested for HIV and 254 (5%) tested positive. A total of 2,876 (24%) clients with symptoms suggestive of Diabetic Mellitus (DM) were tested for random blood glucose.

Among these 153 (6%) had elevated blood glucose and were referred for further management at the nearest health facility.

- CTB co-funded a WHO external national tuberculosis programme (NTP) review, through the engagement of the team of external TB experts, and technical assistance from the local CTB staff. The following were the key findings related to CTB investment:
    - There has been an expansion of TB diagnostic services, including the Xpert MTB/Rif assay (Gene Xpert), specimen transport system and digital radiography.
    - Uneven coverage of TB/HIV collaborative activities across districts and concerns about the quality of implementation of Isoniazid Preventive Therapy (IPT) were noted, an area of priority focus for CTB.
    - The diagnosis of DR-TB has expanded with the introduction of molecular tests and the treatment has been decentralized to community level.

Recommendations from the review have been used to inform the CTB year 3 (e.g. implementation of integrated TB/HIV care at rural district level to further cascade to primary health care in rural settings) planning and will also inform development of the new NTP strategy (2018 – 2022). Recommendations will also be used to inform development of the new GF concept note.

- Following the engagement with parliament in APA1, the government of Zimbabwe with support from CTB launched the National TB Caucus in July 2016 as part of the country's commitment to the global declaration to end TB. The number of parliamentarians who have since signed up to the declaration has risen from an initial 14 (4%) in August 2015 to 137 (39%) out of 350 by September 2016. A total of 50 parliamentarians were engaged in APA2. The parliamentarians have pledged to engage National AIDS Council to apportion part of the National AIDS Trust Fund to the TB program.

2. Introduction

Zimbabwe is a landlocked country in southern Africa, with eight predominantly rural provinces and two metropolitan cities. The eight rural provinces are demarcated into 65 districts[1]. According to the 2012 census, the projected population for 2016 was 13,591,578 inhabitants. The maternal mortality rate is estimated at 651 per 100,000 live births with an infant mortality rate at 50 deaths per 1,000 births, and life expectancy at birth is 58[2]. The Ministry of Health and Child Care (MoHCC) has the sole mandate to provide, coordinate, and advocate for equitable access to quality health services. Local authorities, under the Ministry of Local Government, have obligations of providing primary health care services to residents in their jurisdiction. There are also well-established faith based health establishments, private and mine hospitals across the country and most major cities that complement provision of health services[3].

The country has suffered from multiple economic and humanitarian crises for much of the last decade. This has resulted in poor industrial performance, and increased unemployment. The pre-2009 economic crisis severely impacted upon social sector service provision. Economic recovery began with the conversion to a multicurrency system in 2009. Despite dollarization and other efforts to stabilize the economy, Zimbabwe's economy remains fragile, experiencing deflation since February 2014. This has resulted in retrenchments and a widening poverty gap. Moreover, Government revenues remain insufficient to provide essential services.[4] The overall budget allocation to the public health sector has remained constrained over the years, at less than 10% of annual budget, against the agreed Abuja target of at least 15%.

Over the last 3 months, Zimbabwe has been experiencing a worsening liquidity crunch, characterized by significant restrictions in cash withdrawals from banks for both individuals and corporates (including Non-Governmental Organisations). The current status quo has slowed down implementation of activities, a significant threat to CTB project implementation. A total of 20 out of 80 district to facility and three out of 12 province to district support visits had not been done by the end of the year.

In 2015, a total of 28,497 TB cases were reported through the national surveillance system, representing an 11% decline from the 32,018 cases notified in 2014. This decline was consistent across all provinces though varied significantly from as low as 3% in Matabeleland North Province to as high as 21% in Manicaland Province, pointing to potential gaps in case finding in some provinces. Southern provinces have consistently borne the brunt of TB-related deaths over the years. In 2014, the proportion of deaths among all TB patients ranged between 13-19% in the southern provinces compared to the national rate of 9%. The estimated HIV prevalence in the southern provinces is correspondingly higher than in other provinces.

CTB is the second largest funder of the NTP after Global Fund (GF). The scope of support for CTB is national with selected key interventions targeting 37 districts in 6 provinces in the southern region of the country. The Union is the lead partner collaborating with WHO, IRD and KNCV. The buy-in for APA2 was $5,997,824. The country 5-year strategic outlook for CTB prioritised four thematic areas, namely Case finding, TB-HIV, Programmatic Management of Drug-Resistant TB (PMDT) and Monitoring and Evaluation (M&E). The 5-year CTB strategy was developed in consultation with key stakeholders tapping from existing country documents, such as the National TB Strategic Plan [2015-2017] (NSP), The Global Fund Concept Note, the National TB programme Review, the Standard and Benchmarks Assessments, Epidemiological Assessment among other key documents.

Activities under APA 2 were guided by the strategic focus of the country 5-year CTB outlook. Table 1 below summarises objectives, sub-objectives and intervention areas prioritised in APA 2:

[1] Zimbabwe Population Census 2012
[2] Zimbabwe Demographic Health Survey Preliminary Report, 2015
[3] Draft National Tuberculosis Program External Review Report, June 2016
[4] Independent Evaluation of the 2012-2015 Zimbabwe United Nations Development assistance framework, 2014

Table 1 Priority technical areas and scope of work for APA 2

Objective 1	Objective 2	Objective 3
Improved access to quality patient centered care for TB, TB/HIV & MDR-TB services	Prevention of transmission and disease progression	Strengthened TB platforms
Sub-objectives	**Sub-objectives**	**Sub-objectives**
1. Enabling environment 2. Comprehensive, high quality diagnostic network 3. Patient-centred care and treatment	4. Targeted screening for active TB	7. Political commitment & leadership 8. Comprehensive partnerships & informed community involvement 10. Quality data, surveillance and M&E 11. Human Resources Development
Intervention Areas (scope of work for APA 2)		
1.2 Demand side, community empowered especially among risk groups.	4.1. Contact investigation implemented and monitored	7.2. In-country political commitment strengthened
2.3. Access to quality culture/ Drug Susceptibility Testing (DST) ensured 2.4. Access, operation and utilization of rapid diagnostics (i.e. Xpert) ensured for priority populations 2.6 Expedient laboratory specimen transport and results feedback operation system	4.2. TB social determinants identified, appropriate interventions designed, implemented and monitored	7.3. Leadership and management competencies and capacities of NTPs ensured
3.1. Ensured intensified case finding for all risk groups by all care providers		8.2 Global Fund rate is improved.
3.2. Access to quality treatment and care ensured for TB, DR-TB and TB/HIV for all risk groups from all care providers		10.1. Well -functioning case or patient-based electronic recording and reporting system is in place 10.2. Epidemiologic assessments conducted and results incorporated into national strategic plans
		11.1. Qualified staff available and supportive supervisory systems in place
		12.1. Technical supervision

3. Country Achievements by Objective/Sub-Objective

Objective1. Improved access to quality patient centered care for TB, TB/HIV & MDR-TB services

Sub-objective 1. Enabling environment

The interventions and activities aimed at creating an enabling environment were as follows:

1.2 Demand Side: community empowered especially among risk groups

- Conducting a Knowledge, Attitudes and Practices (KAP) Survey to determine percentage of community with correct knowledge and positive attitudes towards people affected by TB
- Development of a communications strategy
- Conducting media advocacy meetings to strengthen coverage of TB, MDR-TB and TB-HIV activities
- Development and printing of information, education and communication

The table below summarizes the outcome indicators for this Sub-objective:

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target Y2	Result Y2
1.2.1	% of (population) with correct knowledge and positive attitudes towards people affected by TB	To be measured within the framework of a separate core project study in selected countries	Unknown	N/A	16% (103/644 participants) of the participants interviewed displayed correct comprehensive knowledge of TB while 49% (315/644 participants) had positive attitudes towards people affected by TB.

Key Results

Survey to determine the community's knowledge, attitudes and practices towards TB

CTB supported a survey to determine the community's knowledge, attitudes and practices towards TB in five provinces of the country with the highest TB burden. Main findings from the survey included the following: 16% of the targeted population had comprehensive knowledge about TB, 81% did not feel adequately informed about TB, 75% had never heard about MDR-TB while 51% would avoid people with TB. The preferred sources of information on TB were health care workers (HCWs) and community health workers for the rural population and radios and televisions for those living in the urban areas. The findings and recommendations informed the development of the communication strategy.

Development of a communications strategy

CTB supported the development of a communications strategy, which was informed by the KAP study. The communication strategy will guide interventions for community empowerment in response to TB. The strategies include addressing stigma and discrimination, promoting early health seeking behavior, health education and promotion. These strategies aim to increase the community's comprehensive knowledge about TB from 16% in 2016 to 50% in 2020.

Conducting media advocacy and mentorship to strengthen coverage of TB, MDR-TB and TB-HIV activities

CTB supported a media advocacy meeting with 19 health journalists from both print and broadcast media on strengthening media coverage of the TB program. In addition, 16 journalists (eight mentees and eight mentors) were mentored on correct and comprehensive reporting of TB stories. Four journalists attended a field media tour in Chegutu and Makonde districts where outreach for targeted screening for active TB among high risk communities was being

conducted. As a result of the above interventions, 70 TB news articles were successfully tracked in both print and broadcast media by the end of APA2. This demonstrates increased media coverage on TB. It is expected communities will be empowered to demand quality patient centred care.

Development and printing of information, education and communication (IEC) materials

CTB supported the production of the NTP's maiden newsletter titled 'TB News'. By the end of APA2 the bi-annual newsletter's 2nd edition was being compiled and will be printed in October 2016. The newsletter is a platform for program information dissemination, health education and promotion, advocacy to mobilise domestic resources, as well as enhancing visibility of CTB as a USAID funding mechanism for TB in Zimbabwe. The targeted audience for this production are HCWs, communities, parliamentarians and other stakeholders. The newsletter will continue to be produced in subsequent years of CTB. Below are some of the links of the media coverage received:

Figure 1: Some of the media Links of TB articles tracked throughout the year

https://www.newsday.co.zw/2016/09/29/twin-evils-malnutrition-tb-ravage-children-rural-communities/
http://hmetro.co.zw/ministry-takes-tb-fight-to-communities/
http://www.herald.co.zw/chws-bridge-to-tb-treatment-in-community/
https://www.newsday.co.zw/2016/09/13/strengthening-adherence-tb-treatment-critical/
http://hmetro.co.zw/intensified-tb-screening-in-mines/
https://www.newsday.co.zw/2016/09/13/strengthening-adherence-tb-treatment-critical/
http://www.chronicle.co.zw/great-strides-made-in-tbhiv-treatment-as-authorities-implement-patient-centred-approach/
https://www.dailynews.co.zw/articles/2016/09/10/tb-major-concern-in-harare
http://hmetro.co.zw/hail-tb-programme/
http://www.financialgazette.co.zw/zimbabwe-dogged-by-high-tb-cases/
http://hmetro.co.zw/country-in-historic-tb-caucus-birth/
http://hmetro.co.zw/country-in-historic-tb-caucus-birth/
http://hmetro.co.zw/call-to-combine-art-and-tb-treatment/
http://hmetro.co.zw/call-to-find-all-tb-cases-in-communities/

A participant signs a consent form during the KAP survey data collection exercise (Credit: Paidamoyo Magaya)

Sub-objective 2. Comprehensive, high quality diagnostics

The interventions and activities aimed at strengthening comprehensive and high quality diagnosis were as follows:

2.3 Access to quality culture/DST ensured:

- Refurbishment to facilitate installation of Hain machine procured under GF at the National TB Reference Laboratory (NTBRL).
- Training of laboratory scientists at the NTBRL on Line Probe Assay (LPA) technology.

2.4 Access, operation and utilization of rapid diagnostics (i.e. Xpert ensured for priority populations)

- Support optimization of the use of GeneXpert machines in existing sites through training of nurses in Manicaland Province.

2.6 Expedient laboratory specimen transport and results feedback system operational

- Support the specimen transport system initiated through TB CARE I
- Stakeholder consultation on transitional planning for specimen transport supported through CTB

The table below summarizes the outcome indicators for this Sub-objective.

Sub-objective 2. Comprehensive, high quality diagnostics

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target Y2	Result Y2
2.1.2	A current national TB laboratory operational plan exists and is used to prioritize, plan and implement interventions	Description: This indicator measures whether or not a country has a defined TB laboratory operational plan (work plan) within the larger National TB Strategic Plan or National Laboratory Strategic Plan. The country and partners use the operational plan to design and implement priority activities to strengthen TB diagnostic services and the network for TB control. Indicator Value: Score based on the following: 0= Operational plan not available 1= Operational plan available 2= Operational plan available and follows standard technical and management principles of a quality work plan required for implementing the necessary interventions to build and strengthen the existing TB laboratory network (reference: "Practical Handbook for National TB Laboratory Strategic Plan Development"; http://www.stoptb.org/wg/gli/assets/documents/Lab_Strategic_Handbook.pdf) 3= Operational plan available and meets annual implementation targets	1 (2015)	N/A	1 (CTB did not invest in this indicator in APA1 and APA2. There are plans to support the development of a TB laboratory specific strategic plan and operational plan in APA3)
2.2.6	Number and percent of TB reference laboratories (national and intermediate) within the country implementing a TB-specific quality improvement program i.e. Laboratory Quality Management System (LQMS)	Description: This indicator measures the percentage of TB reference laboratories in the country that are implementing a quality management system for continuous improvement of all aspects of laboratory operations to assure accuracy and reliability of testing, disaggregated by national and intermediate levels. Provide a score/rating for every reference laboratory implementing LQMS, either the "GLI Stepwise Process towards TB Laboratory Accreditation" (scoring = phase 1-4) or SLIPTA/SLMTA for TB (scoring=stars 1-5). Indicator value: Number and percent (Reference: Laboratory Quality Management Systems Handbook; http://www.who.int/ihr/publications/lqms/en/) Numerator: Number of TB reference laboratories implementing a quality improvement program Denominator: Total number of TB reference laboratories in the country Level: National and/or Intermediate	2/2 (100%) 2014	N/A	0% (In APA1 and APA2, CTB did not support the TB Reference laboratories to implement a TB-specific LQMS. There are no plans to invest in this area in APA3.)

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target Y2	Result Y2
2.2.7	Number of GLI-approved TB microscopy network standards met	Description: This indicator measures whether or not a country has met the 11 GLI-approved standards for the TB microscopy network. A CTB checklist is provided to assess fulfillment of the requirements for each standard. Identify numerically (1-11) which standard(s) have been met. (Reference: "TB Microscopy Network Accreditation: an assessment tool"; http://www.who.int/tb/laboratory/microscopy-network-accreditation-assessment-tool.pdf) Indicator value: Number Numerator: Total number of standards met (NE=not evaluated, 0=no standards have been met).	TBD (2nd Quarter APA2)	N/A	91% (10/11) standards: 1, 2, 3, 4, 5, 6,7, 8, 9 & 10
2.3.1	Percent of bacteriologically confirmed TB cases who are tested for drug resistance with a recorded result.	Description: This indicator measures the percentage of bacteriologically confirmed TB cases that are tested for drug resistance and also have results recorded in the TB register (disaggregated by new and previously treated cases). Drug resistance testing includes phenotypic (culture DST) and genotypic (molecular DST by GeneXpert, LPA or other molecular technologies). Indicator Value: Percent Level: National and Challenge TB geographic areas Numerator: Number of bacteriologically confirmed TB cases that are tested for drug resistance and have results recorded in the TB register. Denominator: Total number of bacteriologically confirmed TB cases notified during the reporting period	6,955/12,890 54% (2014) These data are based on Xpert results of new and retreatment cases	60%	Unknown These data are not collected in the current NTP routine reporting system. These tools will be revised in APA3 to capture this indicator. Last year we used data from Presumptive TB registers and we noted that there are data quality challenges as some facilities sent more than one specimen for one patient for Gene Xpert. Using the same data source for last year the figures are 4725/13079 (36%) for national level

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target Y2	Result Y2
2.4.1.	GeneXpert machine coverage per population (stratified by Challenge TB, other)	Description: This indicator measures the average population size per GeneXpert machine Indicator Value: Number Level: National and Challenge TB geographic areas Numerator: Population size (the numerator is available from the most recent census data). Denominator: Total number of GeneXpert machines in the country/area.	1 machine per 212,982 (2014)	1 machine per 113,263 population	1 machine per 113,263 population (There were 120 machines as of September 2016)
2.4.6	#/% of new TB cases diagnosed using GeneXpert	Description: Proportion of new TB cases diagnosed using GeneXpert Indicator Value: Percent Level: National and Challenge TB geographic areas Numerator: Number of new TB cases diagnosed using GeneXpert Denominator: Total number of new TB cases	Unknown	TBA	Unknown Xpert tests which detected TB could not be disaggregated to new and retreatment since the M&E tools were not capturing these. This will be addressed in APA3 through revision of tools and the introduction GX alert.
2.6.4	# of specimens transported for TB diagnostic services	Description: Number of specimens transported for TB diagnostic services via a specimen transport system Indicator Value: Number Level: National and Challenge TB geographic areas Numerator: Number of specimens transported for TB diagnostic services via a specimen transport system	54,000	60,000	50,809

Key Results

2.3 Access, operation and utilization of rapid diagnostics

Refurbishment to facilitate installation of Hain machine procured under GF at the NTBRL

CTB supported the refurbishment of the NTBRL in Bulawayo to facilitate installation of the Hain machine to ensure access to rapid quality assured 1st and 2nd line Drug Susceptibility Testing (DST). The renovations were completed in APA2 and CTB supported the training of 9 laboratory scientists (5 males; 4 females) on LPA technology, use and maintenance of

the Hain machine as well as quality control and quality assurance issues. A total of 331 samples were analyzed from January to June 2016.

Challenges and Proposed Solutions

- There were no tests performed after the micro centrifuge broke down in June 2016. CTB plans to address this challenge in APA3 through the procurement of a new micro centrifuge and installation of an air conditioner.

2.6 Expedient laboratory specimen transport and results feedback system operational

Specimen transportation

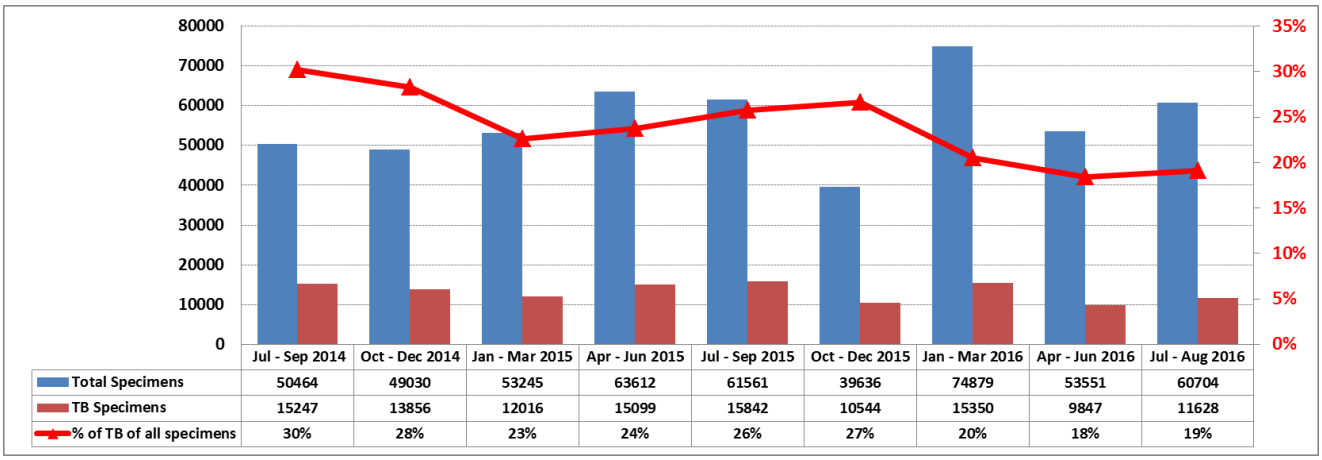
A total of 250,131 specimens were ferried through the transportation system in APA2, out of these 50,809 were TB specimens and 199,322 (80%) were non-TB specimens, highlighting the significance of the system to overall health systems strengthening. Figure 2 below shows the consistent usage of the specimen transport system since 2014. A total of 50 motorcycles were supported in 42 districts and three major cities. A stakeholders' consultation workshop was held to review the current specimen transportation systems and to establish consensus on a more sustainable integrated system. The workshop was attended by MoHCC staff from national, provincial and district level, representatives from 3 local authorities, and partners, namely; The Union, Clinton Health Access Initiative, WHO, Riders for Health, Rehabilitation and Prevention of TB, National AIDS Council and Association of Public Health Laboratories (APHL) The workshop recommended two options that will be piloted between April and June 2016 through GF support. The best option will be recommended for partner support. The options are:

1. Cluster/relay system by Environmental Health Technicians,

2. Use of a dedicated cadre identified within the MoHCC.

The TA engaged through GF for the comprehensive documentation of different options leading to harmonization of the system has begun the work to be completed by December 2016.

Figure 2: Specimens (all & TB) transported through the specimen transport system (2014-2016)



	Jul - Sep 2014	Oct - Dec 2014	Jan - Mar 2015	Apr - Jun 2015	Jul - Sep 2015	Oct - Dec 2015	Jan - Mar 2016	Apr - Jun 2016	Jul - Aug 2016
Total Specimens	50464	49030	53245	63612	61561	39636	74879	53551	60704
TB Specimens	15247	13856	12016	15099	15842	10544	15350	9847	11628
% of TB of all specimens	30%	28%	23%	24%	26%	27%	20%	18%	19%

Sub-objective 3. Patient-centered care and treatment

The interventions and activities aimed at strengthening patient-centered care and treatment are:

3.1 Ensured intensified case finding for all risk groups by care providers.

- Provincial PMDT trainings for increased case detection of DR-TB
- Pilot the Childhood TB intervention package in Manicaland Province through MCHIP

3.2 Access to quality treatment and care ensured for TB, DR-TB and TB-HIV for all risk groups from all care providers.

- Revision and updating the national TB manual
- Roll out integrated TB-HIV care (ITHC) to 20 additional peripheral sites

The table below summarizes the outcome indicators for this Sub-objective:

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target	Result
				Y2	Y2
3.1.1	Number and percent of cases notified by setting (i.e. private sector, pharmacies, prisons, etc.) and/or population (i.e. gender, children, miners, urban slums, etc.) and/or case finding approach	Description: The number of TB cases all forms (i.e. bacteriologically confirmed plus clinically diagnosed, new and relapse) reported by the NTP disaggregated by setting	13,761/32,018 (43.0%) Female; 2,398/32,018 (7.5%) Children <15 (2014)	8% (For Children <15y)	Please refer to the detailed table on page 59
3.1.4	Number of MDR-TB cases detected	Description: Total number of bacteriologically confirmed MDR-TB cases diagnosed.	412 (2014)	537	468 (Data from January – December 2015) 325 (Data from January – June 2016)

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target Y2	Result Y2
3.1.8	% of TB cases (all forms) diagnosed among children (0-14)	Description: This indicator measures proportion of TB cases (all forms) diagnosed in children 0-14 years of age.	8% (2014)	9%	6% (1186/20249) (Results available for October 1, 2015 to June 30, 2016) – July to September results to be available by 30 November)
3.2.1	Number and percent of TB cases successfully treated (all forms) by setting (i.e. private sector, pharmacies, prisons, etc.) and/or by population (i.e. gender, children, miners, urban slums, etc.)	Description: The proportion of a cohort of TB cases (all forms, bacteriologically confirmed and clinically diagnosed, new and relapse) registered in a specified period that were successfully treated	81% (all cases 2013)	85%	83% (25,282/30,401)
3.2.4.	Number of MDR-TB cases initiating second-line treatment	Description: The number of bacteriologically confirmed, clinically diagnosed or unconfirmed MDR-TB cases started on second-line treatment during the reporting period.	390 (2014)		433 (January – December 2015) 281 (January – June 2016

<table>
<tr><th>#</th><th>Outcome Indicators</th><th>Indicator Definition</th><th>Baseline (Year/ timeframe)</th><th>Target Y2</th><th>Result Y2</th></tr>
<tr><td>3.2.7.</td><td>Number and percent of MDR-TB cases successfully treated</td><td>Description: The proportion of confirmed MDR-TB patients successfully treated (cured plus completed treatment) among those enrolled on second line TB treatment during the reporting period</td><td>75% (2012)</td><td>75%</td><td>59% in 2013 (207/351)
<table><tr><th># of patients registered</th><th># successfully treated</th><th># died</th><th># loss to follow up</th><th># treatment failed</th><th># not evaluated</th></tr><tr><td>351</td><td>207 (59%)</td><td>43 (12%)</td><td>14 (4%)</td><td>1 (0%)</td><td>86 (25%)</td></tr></table></td></tr>
<tr><td>3.2.11</td><td>% of HIV+ registered TB patients given or continued on CPT during TB treatment</td><td>Description: The purpose is to monitor commitment and capacity of programs to provide co-trimoxazole preventative therapy (CPT) to HIV-positive TB patients.</td><td>96% (2013)</td><td>98%</td><td>National (October 2015-June 2016)
• 81% (11,233/13,795)

ITHC sites (October 2015-June 2016)
• 91% (955/1,052)</td></tr>
<tr><td>3.2.12</td><td>% of HIV-positive registered TB patients given or continued on anti-retroviral therapy during TB treatment</td><td>Description: The purpose is to measure commitment and capacity of TB service to ensure that HIV-positive TB patients are able to access ART.</td><td>78% (2013)</td><td>90%</td><td>National (October 2015-June 2016)
• 81% (11,161/13,795)

ITHC sites (October 2015-June 2016)
• 82% (861/1,052)</td></tr>
<tr><td>3.2.13</td><td>% TB patients (new and re-treatment) with an HIV test result recorded in</td><td>Description: The purpose is to assess how many TB patients know their HIV status, regardless of whether testing was done</td><td>91% (2013)</td><td>96%</td><td>National (October 2015-June 2016)
• 99% (20,641/20,919)

ITHC sites (October 2015-June 2016)
• 98% (1,570/1,608)</td></tr>
</table>

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target Y2	Result Y2
	the TB register	before or during TB treatment.			

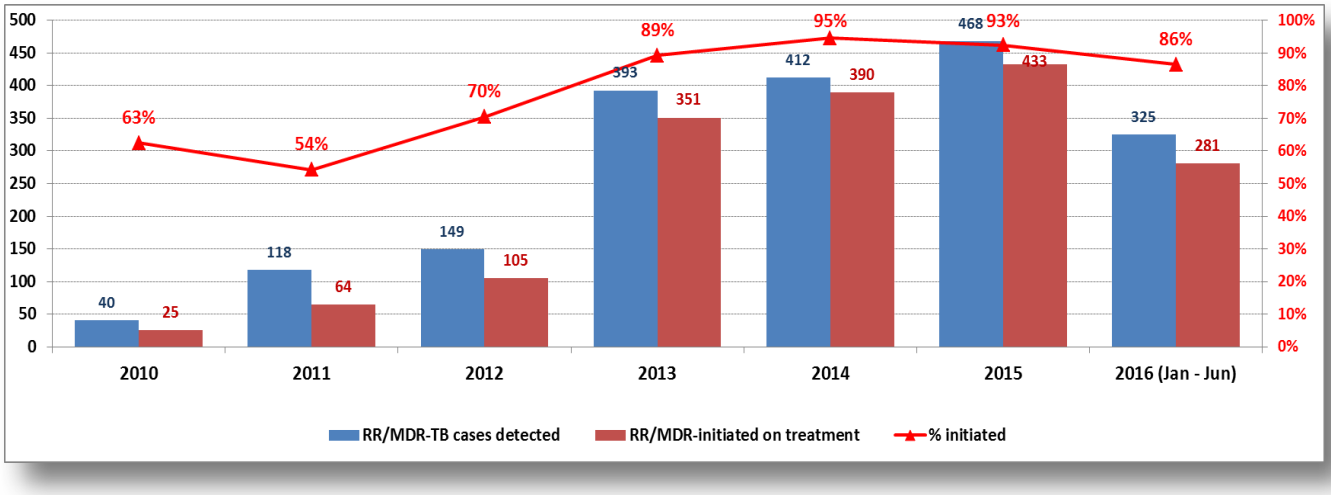
Key Results

3.1 Ensured intensified case finding for all risk groups by care providers

Conduct provincial PMDT trainings for increased case detection of DR-TB

A total of 60 HCWs (38 males, 22 females) comprising medical officers, pharmacists, nurses and TB coordinators were trained in the two regional PMDT training of trainers workshops conducted in April 2016.
A total of 468 patients were detected in 2015 and 433 (93%) were started on treatment. During the first half of 2016, 325 patients were detected and 281 (86%) began treatment, as shown in figure 3 there has been a sustained increase in treatment initiation from 54% in 2011 to 86% in the first half of 2016 .

Figure 3: Case detection and treatment enrolment of RR/MDR-TB (2010 -2016)



Pilot the Childhood TB intervention package in Manicaland

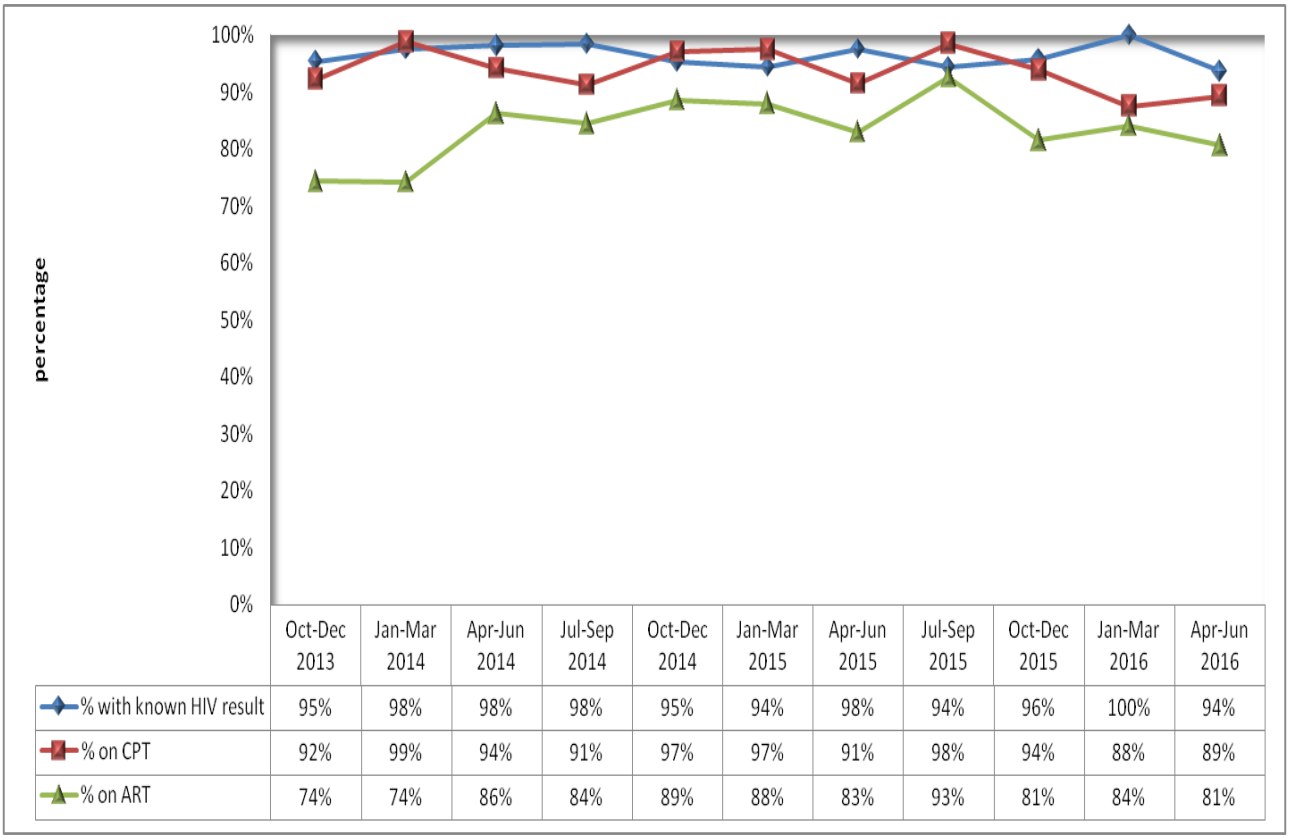
CTB supported the piloting of a Childhood TB intervention package in Makoni district in Manicaland. The package included training of HCWs in the diagnosis and management of children with TB, strengthening community participation and the development of a Childhood TB training guide for community based health workers (CBHWs). In the first two quarters of implementation (January to June 2016), 21 (13%) children out of 159 total notified cases were diagnosed as compared to 4 (3%) children out of 135 total notified cases in the previous two quarters (June to December 2015).

3.2 Access to quality treatment and care ensured for TB, DR-TB and TB-HIV for all risk groups from all care providers

Roll out integrated TB-HIV care to 20 additional peripheral sites

A total of 38 nurses (8 males; 30 females) from 19 out of the 20 targeted new ITHC sites were attached to existing ITHC sites where they received training on integrated TB-HIV care and treatment. The new sites are from predominantly rural settings in addition to the existing 26 urban sites. This brings to a total of 45 sites that are currently implementing the patient-centered ITHC model. The results from the ITHC sites show significant coverage for TB/HIV indicators as shown in figure 4. Compared to national data, CPT coverage among HIV positive TB patients was 91% for ITHC sites compared to 81% for national. CTB plans to capacitate respective district teams in APA3 to further improve performance of the ITHC sites”

Figure 4: TB/HIV indicators for ITHC sites (2013 - 2016)



	Oct-Dec 2013	Jan-Mar 2014	Apr-Jun 2014	Jul-Sep 2014	Oct-Dec 2014	Jan-Mar 2015	Apr-Jun 2015	Jul-Sep 2015	Oct-Dec 2015	Jan-Mar 2016	Apr-Jun 2016
% with known HIV result	95%	98%	98%	98%	95%	94%	98%	94%	96%	100%	94%
% on CPT	92%	99%	94%	91%	97%	97%	91%	98%	94%	88%	89%
% on ART	74%	74%	86%	84%	89%	88%	83%	93%	81%	84%	81%

Challenges and Possible Solutions

- Most of the sites which were prioritized by the MoHCC as new ITHC sites are district hospitals which have a large staff complement. There were only two nurses trained from each of the 19 new ITHC sites and these are too few to ensure rapid uptake of the initiative. In APA3, CTB will strengthen on-site mentorship to ensure that an optimum pool of HCWs is competent in integrated TB-HIV management at these sites.

- For the period January to June 2016, a total of 44 out of 325 (14%) of the newly diagnosed RR/MDR TB patients were not initiated on treatment. Possible reasons are delayed treatment initiation; initial loss to follow up and death prior to treatment initiation. In APA3, CTB will invest in capacity building of HCWs on patient care and retention through onsite support and supervision visits and mentorship.

Objective 2: Prevention of transmission and disease progression

Sub-objective 4. Targeted screening for active TB

The interventions and activities aimed at strengthening prevention of transmission and disease progression were as follows:

4.1 Contact Investigation implemented and monitored

- Pilot intensified contact investigation for both adults and children at two high TB notification districts.

4.2 TB social determinants identified, appropriate interventions designed, implemented and monitored

- Adapt WHO guidelines for active TB screening and reporting tools among high risk groups.
- Targeted screening for TB for increased case finding through BRTI.

The table below summarizes the outcome indicators for this Sub-objective:

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target Y2	Result Y2
4.1.1	#/% of eligible index cases of TB for which contact investigations were undertaken	Description: The proportion of eligible index cases of TB for which contact investigations were undertaken Indicator Value: Percent Level: National and Challenge TB geographic areas Numerator: Number of index cases of TB for which contact investigations were undertaken during the period of assessment Denominator: Total number of index cases registered during the period of assessment	Unknown	100%	56% (18/32)
4.2.2	# of high risk persons screened for TB (stratified by applicable risk groups)	Description: Number of high risk persons screened for TB (investigations for TB must be performed in accordance with existing national guidelines) Indicator Value: Number Level: National and Challenge TB geographic areas Numerator: Number of high risk persons screened for TB	0	20,000	11,870

Key Results

4.1 Contact Investigation implemented and monitored

A community led pilot for intensified case finding through contact investigation for both adults and children was initiated through two Community Based Organizations (CBOs). Pilot implementation started in August 2016 due to the delays in the procurement process for the motorbikes. In the first month of implementation, 32 index cases (bacteriologically confirmed) were identified of which 18 (56%) had at least one contact screened. A total of 146 contacts were identified and 23 (16%) were children under 5 years. Of the 146 contacts identified, 129 (88%) were screened for TB and 56

(43%) were presumptive TB patients. Among the 56 presumptive TB clients, 32 (57%) had sputum specimens sent to the laboratory and 30 received their results. One TB bacteriologically confirmed case was identified from the 30 contacts who received their laboratory results. A total of 23 child contacts were identified and 13 (57%) were initiated on IPT.

Challenges and Proposed Solutions

- There were gaps in the cascade of contact investigation which can be attributed to teething challenges, as this activity had only been implemented for one month. In APA3, CTB will support joint review meetings and support and supervision visits to address the identified gaps.

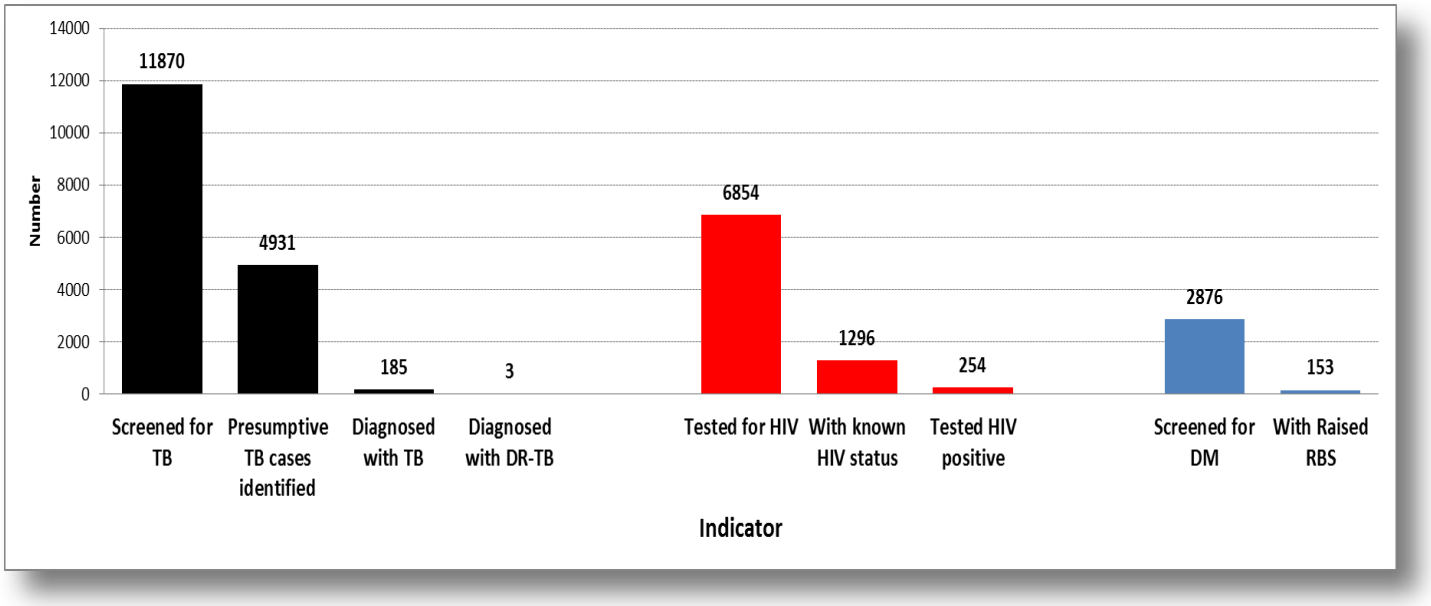
A community volunteer providing a health education session to household contacts of a newly diagnosed bacteriologically confirmed TB case (Credit: Nqobile Mlilo)

4.2 TB social determinants identified, appropriate interventions designed, implemented and monitored

CTB supported the engagement of a consultant who led in the mapping and prioritization of districts with high risk for TB in Zimbabwe. The consultant also assisted in the development of guidelines and standard operating procedures for use during the targeted screening for TB among the high risk communities. Two field teams have since conducted TB screening in 6 priority districts across three provinces using both symptomatic screening and digital X-ray for all clients. A total of 11,870 people were screened for TB among which 4931 (42 %) were presumed to have TB based on a chest X-ray suggestive of active TB and/or positive symptom screen. All identified presumptive TB cases had sputum collected and examined with either smear microscopy of Xpert MTB/RIF. In total 185 (4%) people were diagnosed to have TB (34 bacteriologically confirmed; 151 clinically diagnosed) of whom 3 (2%) had drug-resistant TB (DR-TB). All patients diagnosed were started on appropriate TB treatment. All clients screened for TB were offered HIV testing services and 1,296 were already HIV positive patients on treatment. As a result 6,854 clients were tested for HIV and 254 (5%) tested positive. A total of 2,876 (24%) clients with symptoms suggestive of DM were offered a blood glucose test of

which 153 (6%) were found to have elevated random blood glucose. All clients with elevated blood sugar levels were referred to the nearest health facility for further management. (see figure 5 below)

Figure 5: Outcomes of targeted screening for active TB among high risk groups



Challenges and Proposed Solutions

- There were delays in the finalization of the mapping exercise and development of guidelines which resulted in the late start of implementation of the targeted screening for TB among the high risk groups. The field work was only conducted in the last 45 days of APA2.
- The majority of patients screened for TB had bacteriological confirmation done using Direct Smear Microscopy (DSM) which is less sensitive compared to the GeneXpert. This was due to challenges in accessing cartridges for GeneXpert. In APA3, CTB will procure buffer stock of cartridges to ensure that there is no interruption of service. All presumptive TB patients will be investigated using Xpert MTB/RIF.

Objective 3: Strengthened TB Platforms

Sub-objective 5. Infection control

CTB did not invest in this sub objective in APA2. Although the NTP tools are capturing the indicator below there is limited overall investment channeled to health care worker TB surveillance and treatment. However, funding from CDC has been approved to address the gap.

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target	Result
				Y2	Y2
5.2.3.	Number and % of health care workers diagnosed with TB during reporting period	This indicator measures the percent of healthcare workers (HCWs) diagnosed with TB (all forms) annually (disaggregated by gender and age). Numerator: Number of HCWs diagnosed with TB (all forms) during past year Denominator: Total number of HCWs in the same year"	National 2015 0.35% (99/28340 (Year 2015 data)	No target	January to June 2016 0.22% (63/28340)

Sub-objective 6. Management of latent TB infection

CTB did not invest in this sub objective in APA2; however, management of latent TB in children was addressed in other sub objectives in the CTB plan.

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target	Result
				Y2	Y2
6.1.11.	Number of children under the age of 5 years who initiate IPT	The number of children under the age of 5 years who initiate isoniazid preventive therapy (IPT) during the reporting period. Indicator Value: Number Level: National and Challenge TB geographic areas Numerator: The number of children under the age of 5 years who initiate IPT during the reporting period.	Year 2015 1608	No target	January to June 2016 4881

Sub-objective 7. Political commitment and leadership

The interventions and activities aimed at strengthening of TB platforms were as follows:

7.2 In-country political commitment strengthened

- Engage government of Zimbabwe for increased TB funding.

7.3 Leadership and management competencies and capacities of NTP ensured

- Leadership development through the International Management Development Programme (IMDP) courses.
- NTP implementation and performance review with senior MoHCC management.
- Facilitate access to information and communication (46th World Conference on Lung Health).

The table below summarizes the outcome indicators for this sub-objective:

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target Y2	Result Y2
7.2.3	% of activity budget covered by private sector cost share, by specific activity	Description: This indicator measures the proportion of CTB project activity budget covered by private sector cost share (if not monetary, will require estimation of costs) by specific activity.	0%	N/A	0% There have been challenges in private sector engagement to meaningfully contribute to public health and TB interventions due to the existing harsh economic climate. However, CTB will continue to reach out to the private sector.
7.2.4.	ZIMBABWE SPECIFIC: Number of Parliamentarians attending an advocacy dialogue for increased domestic TB funding		25 (2014)	40	50
7.3.2.	# of NTP members participating in a Challenge TB-led leadership program	Description: This indicator measures the number of NTP members participating in a CTB-led leadership program	2	3	1 Two of the courses were postponed.

Key results

7.2 In-country political commitment strengthened

Following the engagement with parliament in APA1, the government of Zimbabwe with support from CTB launched the National TB Caucus in July 2016 as part of the country's commitment to the global declaration to end TB. The number of parliamentarians who have since signed up to the declaration has risen from an initial 14 (4%) in August 2015 to 137 (39%) out of 350 by September 2016. A total of 50 parliamentarians were engaged in two activities:

- A breakfast meeting in July to launch the national TB caucus (attended by 12 females and 15 males MPs).
- A two day annual advocacy workshop in September (attended by 11 female and 12 male MPs).

In APA3, the parliamentarians will engage National AIDS Council to commit part of the National AIDS Trust fund to the TB program.

7.3 Leadership and management competencies and capacities of NTP ensured

CTB supported one day meeting to discuss the implementation of the TB programme through CTB funding and the role on CTB in TB control in Zimbabwe. Twenty three senior managers attended the meeting. As a result of the meeting MoHCC prepares and distributes a quarterly calendar of activities in order to minimize clashing of planned activities by various programs such as malaria, HIV etc requiring participation of the same HCWs.

The Deputy Director in the AIDS and TB Programme was supported by CTB to attend an international course on Power and Influence Networking and Partnerships in Dubai. The course covered modules on decision making, communication,

conflict resolution and results based management. The acquired skills will be used to improve his leadership and management competencies for effective management of the NTP.

Sub-objective 8. Comprehensive partnerships and informed community involvement

The interventions and activities aimed at strengthening data surveillance and M&E were as follows:

8.2 Global Fund Grant ratings improved

- Facilitate GF implementation Review and writing of the GF update report (PUDR).
- Establish relationship with Global fund hub at KNCV

The table below summarizes the outcome indicators for this sub-objective:

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target Y2	Result Y2
8.1.3	Status of National Stop TB Partnership	Description: This indicator measures the status of National Stop TB Partnership by using special questionnaire for collecting relevant country level data Indicator Value: The score based on below: 0= no National Stop TB Partnership exists 1= National Stop TB Partnership established, and has adequate organizational structure; and a secretariat is in place that plays a facilitating role, and signed a common partnering agreement with all partners; but does not have detailed charter/plan, and does not meet regularly/ produce deliverables; 2= National Stop TB Partnership established, has adequate organizational structure and in a participatory way has developed detailed charter/plan, but does not meet regularly and does not produce deliverables; 3= National Stop TB Partnership established, has adequate organizational structure, has developed detailed charter/plan, meets regularly and critical deliverables are produced Level: National	0 (2014)	N/A	0 Currently there is a functional TB-HIV partnership forum however it does not meet the requirements outlined in the Stop TB partnership guidelines.
8.1.4.	% of local partners' operating budget covered by diverse	Description: This indicator measures the proportion of CTB project local	Unknown	N/A	N/A Local partners were not officially engaged in APA2.

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target Y2	Result Y2
	non-United States Government (USG) funding sources	partners' operating budgets covered by non-USG funding sources.			Partners that will be sub granted in the CTB support mechanism in APA3 will be requested to provide information on non USG funding for their operational budget.
8.2.1.	Global Fund grant rating	Description: This indicator presents Global Fund TB grant performance rating results Indicator value: Score is based on the following: A1 Exceeds expectations A Good performance A2 Meets expectations B1 Adequate B2 Inadequate but potential demonstrated C Unacceptable Level: National	B1 (2014)	B1	A2

Key Results:

8.2 Global Fund Grant ratings improved

CTB staff offered technical assistance to the NTP in the implementation of GF activities and the intervention areas supported by CTB contributed significantly to the improved rating from B1 to A2. Activities supported by CTB included the support and supervision visits, performance review meetings and programmatic update and disbursement request (PUDR). Two PUDR sessions were supported in APA2. District, provincial and national levels reviewed the key GF indicator performance and discussed implementation challenges and bottlenecks and came up with time framed recommendations to address the identified gaps.

Sub-objective 9. Drug and commodity management systems

CTB did not invest in this indicator.

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target Y2	Result Y2
9.1.1.	Number of stock outs of anti-TB drugs, by type (first and second line) and level (ex, national, provincial, district	Description: This indicator should be used to report the number of stock outs of any type of TB drug at any level of the health system that results in interruption of treatment.	0 (2015)	N/A	0 No stock outs recorded in APA2.

Sub-objective 10. Quality data, surveillance and M&E

The interventions and activities aimed at strengthening quality data surveillance and M&E were as follows:

10.1 Well functioning case or patient based electronic recording and reporting system is in place

- Develop an integrated TB-HIV electronic monitoring system
- Provide technical and systems support for Integrated electronic system
- Train HCWs members on DHIS2
- Equipment for DHIS2 & integrated TB-HIV recording and reporting systems

10.2 Epidemiological assessments conducted and results incorporated into NSP

- Conduct TB OR through a local partner.
- Implement DRS activities carried over from Year 1
- Support TB data analysis and Performance reviews workshops
- Conduct Zimbabwe National TB Program External Review (Co support with WHO and GF)

The table below summarizes the outcome indicators for this sub-objective:

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target Y2	Result Y2
10.1.4	Status of electronic recording and reporting system	Description: This indicator measures the status of electronic recording and reporting (ERR) Indicator value: Score based on below: 0=R&R system is entirely paper-based; 1=electronic reporting to national level, but not patient/case-based or real time; 2= patient/case-based ERR system implemented in pilot or select sites (TB or MDR-TB); 3=a patient/case-based, real-time ERR system functions at national and subnational levels for both TB and MDR-TB; 4= a patient/case-based, real-time ERR system is functional at national and subnational levels for both TB and MDR-TB completely and meets WHO standard for TB surveillance data quality.	1 (2015)	2	1

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target Y2	Result Y2
10.2.1	Standards and benchmarks to certify surveillance systems and vital registration for direct measurement of TB burden have been implemented	Description: National TB surveillance system is certified based on WHO standards and benchmarks for TB surveillance and vital registration systems (for paper-based or electronic systems). For a country's TB surveillance systems to be certified as providing a direct measurement of TB cases and TB deaths, all 10 standards and their associated benchmarks (Part B, Section 1) should be met	No (2014)	N/A	Yes A total of 9 standards were assessed and only 5 were met in TB surveillance and vital registration Systems
10.2.6	% of operations research project funding provided to local partner (provide % for each OR project)	Description: This indicator measures the proportion of Challenge TB-supported operations research project funding provided to local partner(s), by each OR project.	0% (2015)	0%	71% (26,171/36,991)
10.2.7	Operational research findings are used to change policy or practices (ex, change guidelines or implementation approach)	Description: For all Challenge TB-supported operation research projects implemented in a country, results of these projects are used to change policy or practices	No (2015)	No	No

Key Results

10.1 Well functioning case or patient based electronic recording and reporting system is in place

Electronic recording and reporting system (ETRR)

CTB did not support activities on the ETRR as planned as the MoHCC changed focus on the implementation approach. There has been a refocus from the various disease specific patient electronic systems to implement an integrated electronic health system. This is already being piloted in one district in Mashonaland East Province. CTB participated in an orientation visit to the pilot site. The software integrates patient level data on multiple disease conditions using one electronic gadget thereby reducing the workload as demographic data is only entered once.

Support the DHIS2 System

Through CTB support, an on-line reporting system, DHIS2 has been customized to enable aggregate reporting of TB surveillance data in real time. A total of 185 HCWs (127 males; 58 females) were trained to use the software for data entry and analysis. These comprised national TB Programme and CTB Technical Officers, Provincial Maternal and Child Health/ TB-HIV Officers, Provincial and District TB Coordinators, Provincial and District Health Information Officers and TB Focal persons from uniformed forces. CTB also supplied 75 laptops to all provincial and district TB coordinators to facilitate program roll-out. Within four months of implementation, 1,569 out of 1,657 (95%) health facilities had their 2015-2016 data entered into the system. The TB data entered are available online and in real time to provincial and

national managers. The managers can now generate site specific data analysis reports, including comparisons over time, across facilities, districts and provinces. This has made it much easier for managers to identify non-performing facilities and districts and to prioritize them for support. Data generated will ease planning as resources can be channeled to where there is greater need.

10.2 Epidemiological assessments conducted and results incorporated into NSP

Conduct TB OR through a local partner

A local partner, OPHID Trust was engaged to determine the Xpert MTB/Rif screening yield in expecting mothers regardless of their HIV status. Recruitment of participants started in June 2016 and by the end of APA2, a total of 119 (8%) participants out of the targeted 2,800 had been recruited into the study. The study was suspended after the first two months of implementation. The protocol was amended to focus on symptomatic pregnant women who will be tested with MoHCC consumables and is awaiting approval. The study will continue in the first quarter of APA3.

Implement Drug Resistant Survey (DRS) activities

CTB supported the TB-DRS. A total of 743 HCWs (455 males, 288 females) from all the participating sites were trained on survey implementation. Enrollment of study participants has been completed in 86 (86%) of the targeted 100 clusters while the remaining 14 clusters will continue until October 31, 2016. As of September 30, 2016, a total of 1,190 (73%) new cases out of the targeted 1,625 were enrolled into the survey. Data cleaning and analysis will be done from February 2017 with the final report expected by May 31, 2017.

Conduct Zimbabwe National TB Program External Review (Co support with WHO and GF)

CTB co-funded with Global Fund an external NTP review that was successfully completed on June 10, 2016. A team of eleven external WHO consultants provided Technical Assistance (TA) with additional support from 8 CTB local staff. The lead consultant, Dr Jeremiah Chakaya was supported through CTB funding. The following were key findings on the NTP support where CTB has made an investment;

- **Tuberculosis Case Finding and Holding:** The country has made great progress with TB case finding and holding. There has been expansion of TB diagnostic and treatment services to near universal access, new diagnostic technologies including the Xpert MTB/Rif assay (Gene Xpert) have been successfully introduced and scaled up, a specimen transport system has been established and digital radiography introduced.
- **TB/HIV Collaborative Activities:** The delivery of TB/HIV services is closely linked with one stop shop models being the norm. The review group however noted uneven coverage of TB/HIV collaborative activities across districts and was concerned about the quality of implementation of Isoniazid Preventive Therapy in several districts.
- **Programmatic Management of DR-TB**: Zimbabwe has made great progress since the programmatic management of drug resistant TB was introduced in 2010. The diagnosis of drug resistant TB has expanded with the introduction of molecular tests and the treatment has been decentralized to community level. There are no patients on a waiting list to initiate treatment with second line drugs. With a treatment success rate of 75% ((2012), the treatment outcomes for drug resistant TB in Zimbabwe. .
- **Monitoring and Evaluation/Operations and Implementation Research**: The Zimbabwe TB program has a robust TB recording and reporting which has recently been incorporated into the national DHIS2. However the system is still paper based and thus prone to errors. There are still pockets of data challenges including incompleteness and inconsistency of records.

Recommendations from the external review will be used to inform development of the new NTP strategy (2018 – 2022) and the new GF concept note.

Support TB data analysis and Performance reviews workshops

All the planned national, provincial and district performance review workshops were conducted. Using principles of a guide developed by NTP with support from CTB, the participants verified and analyzed routine TB data, assessed provision of TB services, addressed identified challenges and discussed implementation of the DHIS2 among other key issues.

Some of the issues identified for action were:

- Incomplete registers resulting in unsatisfactory data quality
- Low GeneXpert utilization.
- High death rates among TB patients
- Poor quality sputum specimens
- Difficulty in diagnosing childhood TB.

Specific time framed recommendations were agreed upon to address the above challenges. The respective provinces have been trained in data driven support supervision visits, and underperforming districts are prioritized for supportive mentorship using CTB investment.

Challenges and Possible Solutions

- CTB did not support activities on the ETRR as planned as the MoHCC changed focus on the implementation approach.

- Although data are now reported through DHIS2 there is need to continue strengthening data quality which is not satisfactory due to misunderstanding of some of the new WHO case definitions. This gap will be addressed during support and supervision visits which will be conducted in APA3.

- The operations research to determine the Xpert MTB/Rif screening yield in expecting mothers regardless of their HIV status which is being conducted through a local partner OPHID Trust was suspended after the first two months of implementation. This was due to the concerns which had been raised by the managers at the implementation sites regarding the consumables which had not been budgeted for in APA2. The protocol was amended to focus on symptomatic pregnant women who will be tested with MoHCC consumables and is awaiting approval. The study will continue in the first quarter of APA3.

Sub-objective 11. Human resource development

The interventions and activities aimed at human resource development were as follows:

11.1 Qualified staff available and supportive supervisory systems in place

- Development of mentorship Curriculum (curriculum to cover PMDT,TB case management, M&E, Childhood TB,TB/HIV integration)
- Support Data Driven Support Visits
- USAID TB funding disbursed to local partners

The table below summarizes the outcome indicators for this sub-objective:

<table>
<tr><th>#</th><th>Outcome Indicators</th><th>Indicator Definition</th><th>Baseline (Year/ timeframe)</th><th>Target Y2</th><th>Result Y</th></tr>
<tr><td>11.1.3.</td><td># of healthcare workers trained, by gender and technical area</td><td>Description: This indicator measures the number of healthcare workers (which includes health facility staff, community health volunteers, laboratory staff, sputum transport technicians, community-based workers) trained, by gender and sub-objective.</td><td>0 (2014)</td><td>1680</td><td>1773
<table>
<tr><th>Number of health care workers trained, by gender and technical area</th><th># trained males APA 2</th><th># trained females APA 2</th><th>Total # trained in APA 2</th></tr>
<tr><td>1. Enabling environment</td><td>17</td><td>18</td><td>35</td></tr>
<tr><td>2.Comprehensive, high quality diagnostics</td><td>115</td><td>178</td><td>293</td></tr>
<tr><td>3. Patient-centred care and treatment</td><td>135</td><td>359</td><td>494</td></tr>
<tr><td>4. Targeted screening for active TB</td><td>15</td><td>8</td><td>23</td></tr>
<tr><td>10. Quality data, surveillance and M&E</td><td>415</td><td>513</td><td>928</td></tr>
<tr><td>Grand Total</td><td>697</td><td>1,076</td><td>1,773</td></tr>
</table></td></tr>
<tr><td>11.1.5</td><td>% of USAID TB funding directed to local partner</td><td>Description: This indicator measures the proportion of CTB annual funding directed to local partner</td><td>2% (2015)</td><td>2%</td><td>5% (302,308 /5,997,824)
The funding was disbursed as follows:
• BRTI – Targeted screening ($276,137)
• OPHID Trust – Operations Research ($30,140)</td></tr>
</table>

Key Results

Development of mentorship Curriculum (curriculum to cover PMDT, TB case management, M&E, Childhood TB, TB/HIV integration)

CTB supported the revision of the HIV Mentorship curriculum which was being used by the National AIDS Program (NAP) for mentorship in the area of opportunistic infection/ anti-retroviral treatment (OI/ART) and prevention of mother to child transmission (PMTCT). The curriculum was revised to include a comprehensive TB component, with input from stakeholders from the NAP, NTP, provinces, districts and partner organizations working in the field of TB-HIV.

Support Data Driven Support Visits

CTB supported all the planned support and supervision visits from the national to province, 9 out of 12 (75%) province to district and 60 out of 80 (75%) district to health facility. The visits mainly focused on data quality assessments, analysis of performance indicators, supply chain management and on-the-job training for HCWs. A structured standard checklist was used to gather all the information needed during visits.

Challenges and Possible Solutions

- Some of the province to district and district to health facility support visits were not conducted due to cash shortages in the country. In APA3 other methods of payment such as electronic money transfers will be employed.

Table 2 Current Global Fund TB Grants

Name of grant & principal recipient *(i.e., Tuberculosis NFM - MoH)*	**Average Rating***	**Current Rating**	**Total Approved/Signed Amount****	**Total Committed Amount**	**Total Disbursed to Date**
ZWE-T-MoHCC (2015-2017)	B1	A2	$38.8M	$29.7M	$18.5M

** Since January 2011*

*** Current NFM grant not cumulative amount; this information can be found on GF website or ask in country if possible.*

In-country Global Fund status - key updates, current conditions, challenges and bottlenecks

The country implemented GF funded activities under the new funding model during the course of the year.
The following key activities were conducted:

- Recruitment of Provincial Medical Officers (TB/HIV and DR-TB) and the national PMDT Programme Officer.
- Procurement of twenty digital x-ray machines, eight audiometry machines and eight ambulances to transport MDR-TB patients.
- An epidemiological assessment was conducted as part of preparations for updating the country strategy for TB control and the follow-on next concept note due in 2017.
- External NTP review to inform the new NTP Strategy
- There was a mission from the GF Office of the Inspector General (OIG) to review grant implementation. The scope of the audit was to assess the adequacy and effectiveness of the current grant implementation.

Challenges

- **Low burn rate** - which is a threat to the grant performance rating. A taskforce was commissioned through the Country Coordinating Mechanism (CCM) TB subcommittee to investigate reasons for the low burn rate. Key recommendations included improving program ownership at all levels, data collection and reporting and capacitating the national level in financial management. During APA3, CTB included program performance reviews at all levels and progress update report writing, which will provide a platform to interrogate these bottlenecks.

- **Current cash shortages** - in the country are affecting activity implementation. However, the NTP has adopted other payment methods such as electronic money transfer systems to avoid disruption of operations.

4. Challenge TB involvement in GF support/implementation and any actions taken during Year 2

- The CTB Country Director is the current vice chair of the TB sub-committee of the CCM which convenes quarterly to review implementation progress and address key bottlenecks.
- CTB funded two workshops to review GF performance and compilation of the semester progress update reports.
- The Childhood TB guidelines, training materials and flow charts that were developed and printed through CTB support were used to cascade provincial trainings across the country through GF support.
- CTB co-supported the revision of the current HIV clinical mentorship guidelines to incorporate TB on-site mentorship to be rolled out as a more cost effective capacity development initiative for health care providers.
- CTB supported performance review meetings and support supervision visits in 6 provinces while GF supported the same activities in the remaining northern part of the country.
- NTP is currently implementing the targeted screening for active TB among high risk groups that is being co-funded by CTB and GF.
- CTB co-funded the external program review with GF.

5. Challenge TB Success Story

Finding the missing TB cases in Zimbabwe

Zimbabwe has a high prevalence of TB with 275 cases per 100,000 population and worryingly an estimated 10,000 people with TB are not identified by health services and may continue spreading the infection in the communities they live. Some high risk groups, such as those living in remote settlements and the growing population of highly mobile miners have limited access to healthcare services, which further compounds the problem.

Miners operate in poorly ventilated areas which makes the spread of TB easy. The lack of sunlight and airflow facilitate the spread of TB bacteria which puts workers at high risk of getting infected if one of their colleagues has TB. These workers can in turn pass the disease to unsuspecting family members and friends outside the work environment.

With support from the USAID funded Challenge TB project, the country embarked on an innovative outreach approach to increase the detection of missing cases in key populations such as miners. High risk communities were first mapped and were then targeted by outreach services using two mobile trucks equipped with digital X-ray machines and manned by a team of health care workers in six prioritized districts.

A total of 11,868 people were screened for TB of which 4,927 showed signs and symptoms of TB and were tested. In total, 168 were diagnosed with TB, three of which had a more deadly form called drug-resistant TB.

People with weak immune systems, because of chronic diseases such as HIV or diabetes, are at a higher risk of progressing from latent to active tuberculosis. So everyone who was screened for TB was also offered an HIV test and those with symptoms suggestive of diabetes had their blood glucose level tested.

"I know anyone can get TB regardless of the age that is why I came to be screened. I do not have enough money to go to the clinic closest to me, so I am happy I am able to access services for free." **David Jemekaya -** a miner who was screened and found TB free.

Those diagnosed with TB were promptly initiated on appropriate treatment at their nearest health facility. A total of 5,558 people took an HIV test, of which 266 tested positive and were linked to treatment and care services. The blood glucose level of 2,855 was tested and 153 had an elevated blood glucose level and were referred for further management at their nearest health facility.

Through continued support this outreach approach has the potential to find many additional TB patients missed by routine services in high risk communities in Zimbabwe. This will significantly contribute towards the country's efforts of ending TB by 2035.

Women waiting for chest X-rays in Gadzema, Chegutu District (Credit Paidamoyo Magaya)

Str

Electronic recording and reporting systems not only facilitate the assessment of data quality but have other benefits, such as reducing loss to follow-up during treatment and assisting with the management of drug supplies. Zimbabwe has traditionally relied on a paper based system which has meant it was hard to assess and compare performance at different levels of the health system, data analysis was difficult and time consuming, and sometimes paper reports have simply been lost.

Through the USAID funded Challenge TB project, an electronic recording and reporting system (District Health Information Software Version 2) has been installed and customized to enable the reporting of TB surveillance data in real time. The software is user-friendly, open source and web-based, with features to view and analyze data originating from facility level. This has been rolled-out to all districts, city health departments, provincial health offices, the Ministry of Health and the childcare national office. Key staff have been trained to use the software for data entry and analysis, and Challenge TB supplied 75 laptop computers to facilitate the roll-out of the software.

Within four months of implementation, 1,569 out of 1,657 (95%) health facilities had their 2015-2016 data entered into the system. The TB data entered are available online and in real time to provincial and national managers. The managers can generate site specific data analysis reports, including comparisons over time, across facilities, districts and provinces. This has made it much easier for them to identify non-performing facilities and districts, and to prioritize them for support. The data generated will ease planning as resources can be channeled to where the need is greatest.

Health Care Workers being trained on the Geographic Information System (GIS) module in Mutare (Credit: Nqobile Mlilo)

6. Operations Research

Table 3: Operations research update

Title of OR study	Local partners involved in study	Implementation Status	Key findings	Dissemination
The Xpert MTB/Rif screening yield in expecting mothers regardless of their HIV status	OPHID Trust	There have been delays in the completion of this study due to amendments to the protocol after two months of implementation by the partner. The amended protocol has been submitted for ethical approval.	N/A	N/A
Diagnosis and treatment of TB patients with detected resistance to rifampicin using Xpert MTB/RIF in Zimbabwe	MoHCC ; Harare City Health Department	Completed	Of 20329 Xpert MTB/RIF assays, 90% were successful, 11% detected Mycobacterium tuberculosis (MTB) and 4.5% showed rifampicin-resistance. There were 77 patients with rifampicin-resistant TB diagnosed by Xpert MTB/RIF. Of 77 patients, 34 (44%) never started MDR-TB treatment, with documented reasons being death, loss-to-follow-up and incorrect treatment. For 43 patients who started MDR-TB treatment, 12 (71%) in Harare and 7 (65%) in Manicaland started within 2 weeks of diagnosis.	Findings were disseminated to stakeholders at the last annual TB review meeting held in September 2016. One of the review recommendation was to strengthen collaboration between clinicians and laboratory services and rapid roll out GXalert beyond Manicaland Province
A comparison of TB treatment outcomes of children, adolescents, adults and the elderly, initiated on 1st line treatment in	MoHCC; Bulawayo City Health Department[5]	Data collection has been completed and data analysis is on-going.	N/A	N/A

[5] This was not in the work plan but was conducted as part of a SORTIT course by a CTB officer in collaboration with the NTP

Title of OR study	Local partners involved in study	Implementation Status	Key findings	Dissemination
Bulawayo, Zimbabwe (2013-2014)				

7. Key Challenges during Implementation and Actions to Overcome Them

Table 4 Technical and administrative challenges and proposed solutions

Challenge	Actions to overcome challenges
Technical	
The development of an electronic TB/HIV patient monitoring and management system has been delayed because of the change in focus from disease specific to an MoHCC universal integrated system (incorporating all health conditions).	Future investments will be aligned to the current strategic focus of the MoHCC.
Certain mandatory indicators are not routinely collected by the NTP such as: Percent of bacteriologically confirmed TB cases who are tested for drug resistance with a recorded result. The current recording and reporting system is not comprehensive enough to adequately provide for CTB Recording and reporting (R&R) requirements.	In APA3 CTB has a plan to introduce GX Alert and support the revision, printing and distribution of R&R tools.
Administrative	
Some provinces did not complete the planned support and supervision visits due to the prevailing cash shortages.	CTB will intensify the use of electronic transfer system and explore other non-cash payment options.
Volatile political environment: - which has recently been associated with civil unrest and protests nationwide. This threatens work attendance and accessibility for field work.	Carry out periodic risk assessments and develop and implement mitigating measures with the NTP for continued project implementation.
Fragile economy:-characterized by deflation and job retrenchments as well as a freeze in public sector recruitments (including health workers). The worsening liquidity crunch has seen restrictions in cash withdrawals for both individuals and corporates, non-governmental organizations included. This status quo threatens human resource retention for project staff as well as implementation of field activities that rely on cash payments.	Remedial measures, such as promotion of electronic payments for services, have been initiated. Continued engagement with the local mission to explore more sustainable options are being pursued.
Health workforce retention scheme: - support by the Health Transition Fund has been reduced due to funding constraints, potentially reversing current gains in arresting human resource flight.	Government is currently exploring options with development partners including proposals of non-financial incentives to motivate and retain health workers.

8. Lessons Learnt/Next Steps

Table 5 Lessons learnt and next steps

Lesson Learnt	Next Steps
Adequate planning and resource allocation are critical to ensure smooth implementation of pilot interventions. This will ensure delivery of best outcomes.	Future CTB pilot interventions will be allocated adequate resources, including support supervision.
Results of surveys and research provide evidence to inform better planning of interventions, such as the KAP survey which revealed key knowledge gaps and undesirable attitudes and practices among communities regarding TB	Future planning of CTB interventions will ensure provision of more evidence and use of such evidence for decision making. For example, the long awaited results of the DRS are likely to result in strategic refocus of PMDT interventions. Community interventions will seek to address gaps identified through KAP survey.
Engagement of NTP during planning and implementation is critical to ensure completion of planned activities. Despite the unfavorable economic conditions the burn rate for APA2 was at 90% by September 30, 2016.	CTB will sustain this approach for successful implementation of activities.
It is feasible to introduce electronic surveillance systems in resource limited settings as was evidenced in APA2 with the introduction of DHIS2 which has resulted in better TB data storage and management for all facilities	CTB will continue strengthening of DHIS2 to improve timely reporting and completeness
The unavailability of the MoHCC strategy policy framework for m-health initiatives has led to inconstancies in strategic guidance to partners in the management of patient electronic management systems.	CTB will advocate for the development of a comprehensive MoHCC strategy and policy framework for e-health.
Comprehensive review and feedback from Programme Management Unit (PMU), The Union head office and USAID on Zimbabwe CTB planning and reporting documents has resulted in improved quality of final submissions.	CTB will continue to tap from the valuable expertise guidance and contributions in future work.

Annex I: Year 2 Results on Mandatory Indicators as well as National Data on the Number of pre-/XDR-TB Cases Started on Bedaquiline or Delamanid

MANDATORY Indicators					
Please provide data for the following mandatory indicators:					
2.1.2 A current national TB laboratory operational plan exists and is used to prioritize, plan and implement interventions.	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes
Score as of September 30, 2016	1	N/A	Limited	Laboratory operational plan is available as an integral part of the NSP operational plan. However, there are plans to develop a TB specific Laboratory strategy and operational plan in year 3 of CTB.	Provide relevant score in line with the indicator definition as presented in CTB M&E framework. Send a copy of current national TB laboratory operational plan to your PMU M&E Officer.
2.2.6 Number and percent of TB reference laboratories (national and intermediate) within the country implementing a TB-specific quality improvement program i.e. Laboratory Quality Management System	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes

Number and percent as of September 30, 2016	0% (0/2)	N/A	None	Zimbabwe has since 2010 received technical assistance from The Zimbabwe National Quality Assurance Program Trust through funding support from CDC, to strengthen medical laboratory management towards accreditation. The only two national reference laboratories were enrolled into the Strengthening Laboratory Management Towards Accreditation (SLMTA) program. The last external assessment was done in 2014 for the 2 laboratories, the outcome of which was (National TB Reference Laboratory (Bulawayo): 2 stars and National Microbiology Reference Laboratory (Harare): 1 star. This support has since waned due to limited funding and transitioned to Association of Public Health Laboratories (APHL), funded through CDC.	Under additional information, provide a score/rating for every reference laboratory implementing LQMS, either the "GLI Stepwise Process towards TB Laboratory Accreditation" (scoring = phase 1-4) or SLIPTA/SLMTA for TB (scoring=stars 1-5). (Reference: Laboratory Quality Management Systems Handbook; http://www.who.int/ihr/publications/lqms/en/)
2.2.7 Number of GLI-approved TB microscopy network standards met	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes

Number of standards met as of September 30, 2016	91% (10/11) standards: 2, 3, 4, 5, 6,7, 8, 9,10 & 11	N/A	None	The country does not have a national strategic plan for TB laboratory services .CTB has included in its APA3 plan activities to address this gap.	This indicator measures whether or not a country has assessed and met the 11 GLI-approved standards for the TB microscopy network. Please send the completed CTB checklist assessing the fulfillment of the requirements for each standard to your PMU M&E Officer. In the additional comments column, provide a list of the standards (number only) that are met.
2.3.1 Percent of bacteriologically confirmed TB cases who are tested for drug resistance with a recorded result.	National 2015	CTB 2015	CTB APA 2 investment	Additional Information/Comments	Notes
Percent (new cases), include numerator/denominator	U	U	Moderate	These data are not collected in the current NTP routine reporting system. These tools will be revised in APA3 to capture this indicator. Last year we used data from Presumptive TB registers and we noted that there are data quality challenges as some facilities sent more than one specimen for one patient for Gene Xpert. Using the same data source for last year the figures are 4725/13079 (36%) for national level	This indicator measures the percentage of bacteriologically confirmed TB cases that are tested for drug resistance and also have results recorded in the TB register (disaggregated by new and previously treated cases). Please note that drug resistance testing includes phenotypic (culture DST) and genotypic (molecular DST by GeneXpert, LPA or other molecular technologies).
Percent (previously treated cases), include numerator/denominator	U	U			
Percent (total cases), include numerator/denominator	U	U			
3.1.1. Number and percent of cases notified by setting (i.e. private sector,	National APA2	CTB APA2	CTB APA 2 investment	Additional Information/Comments	Notes

pharmacies, prisons, etc.) and/or population (i.e. gender, children, miners, urban slums, etc.) and/or case finding approach					
Number and percent	*Fill in data in "Ind 3.1.1 - APA 2" worksheet*	*Fill in data in "Ind 3.1.1 - APA 2" worksheet*			Please completed the separate worksheet "Ind.3.1.1 - APA2"
3.1.4. Number of RR-TB or MDR-TB cases notified	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes
Total 2015	468	468	Substantial	DR-TB case detection is done through following an existing algorithm for Gene Xpert. NTP is exploring possibilities for universal access for Xpert as an initial test for diagnosis in 2017.	Number of laboratory-confirmed cases of rifampicin-resistant TB (RR-TB) or multidrug-resistant TB (MDR-TB) identified among all TB patients (pulmonary or extra pulmonary; new, previously treated or unknown treatment history).
Jan-Mar 2016	193	193			
Apr-June 2016	132	132			
Jul-Sept 2016					
To date in 2016	325	325			
3.2.1. Number and percent of TB cases successfully treated (all forms) by setting (i.e. private sector, pharmacies, prisons, etc.) and/or by population (i.e. gender, children,	National 2014 cohort	CTB 2014 cohort	CTB APA 2 investment	Additional Information/Comments	Notes

miners, urban slums, etc.).					
Number and percent of TB cases successfully treated in a calendar year cohort	Getting from WHO	National data (Getting from WHO)	Substantial		Under additional information (Column E), give disaggregated data by setting (i.e. private sector, pharmacies, prisons, etc.) and/or by population (gender, children, miners, urban slums, etc.) and/or risk population groups defined by national policy (IDUs, diabetics, prisoners, etc.). There may be overlap between settings and groups. Disaggregation by risk population is required in contexts where Challenge TB is providing treatment support for a specific group according to the annual work plan or in contexts where operations research allows for disaggregation and comparison across groups.
3.2.4. Number of patients started on MDR-TB treatment	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes
Total 2015	433	433	Substantial	Global Fund has invested in second line TB drug procurement. In APA2, a total of 325 patients were diagnosed with DR strains in the country, of which 281 (87%) were initiated on treatment.	The number of bacteriologically confirmed, clinically diagnosed or unconfirmed MDR-TB cases started on second-line treatment during the reporting period. Unconfirmed MDR-TB cases are those awaiting C/DST results. RR-TB may fall under confirmed or unconfirmed depending on the country's MDR-TB diagnosis algorithm.
Jan-Mar 2016	166	166			
Apr-June 2016	115	115			
Jul-Sept 2016					
To date in 2016	281	281			
3.2.7. Number and percent of MDR-TB cases successfully treated	National 2013 cohort	CTB 2013 cohort	CTB APA 2 investment	Additional Information/Comments	Notes

Number and percent of MDR-TB cases successfully treated in a calendar year cohort	Getting from WHO	National data (Getting from WHO)	Substantial		The proportion of confirmed MDR-TB patients successfully treated (cured plus completed treatment) among those enrolled on second-line TB treatment during the calendar year. Under additional information (Column E), as applicable, give disaggregated data by HIV status, and XDR status. RR-TB may fall under confirmed MDR-TB depending on the country's MDR-TB diagnosis algorithm.
5.2.3. Number and % of health care workers diagnosed with TB during reporting period	National 2015	CTB 2015	CTB APA 2 investment	Additional Information/Comments	Notes
Number and percent reported annually	0.35% (99/28340)	0.35% (99/28340)	Limited	Although the NTP tools are capturing this indicator there is limited overall investment channeled to health care worker TB surveillance and treatment. The current NTP surveillance for active TB among health workers is predominantly passive with specific guidelines to inform screening activities. However, funding from CDC has been approved to support periodic screening for TB among HCWs.	This indicator measures the percent of healthcare workers (HCWs) diagnosed with TB (all forms) annually (disaggregated by gender and age). This measurement may require a special study using a validated tool and/or methodology.
6.1.11. Number of children under the age of 5 years who initiate IPT	National 2015	CTB 2015	CTB APA 2 investment	Additional Information/Comments	Notes
Number reported annually	1608	1608	Substantial	These are TB child contacts initiated on IPT in TB settings.	The number of children under the age of 5 years who initiate isoniazid preventive therapy (IPT) during the reporting period.

7.2.3. % of activity budget covered by private sector cost share, by specific activity	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes
Percent as of September 30, 2016 (include numerator/denominator)	N/A	0%	None	There have been challenges in private sector engagement to meaningfully contribute to public health and TB interventions due to the existing harsh economic climate. The expectation to get private sector co-funding for CTB supported activities remains a challenge. However, CTB will continue to reach out to the private sector.	This indicator measures the proportion of CTB project activity budget covered by private sector cost share (if not monetary, will require estimation of costs) by specific activity.
8.1.3. Status of National Stop TB Partnerships	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes
Score as of September 30, 2016	0	N/A	None	Currently there is a functional TB-HIV partnership forum that meets quarterly where partners involved in the national TB-HIV response interact and share areas of priority focus to minimize duplication of support and mobilize resources. Although this forum exists, it does not adequately address all requirements outlined in the Stop TB partnership guidelines.	Provide relevant score in line with the indicator definition as presented in CTB M&E framework. Please send a completed CTB questionnaire assessing the status of National Stop TB Partnership to your PMU M&E Officer.

				The TB-HIV partnership is funded by GF and NTP will ensure that it is modeled towards the STOP TB partnership expectations as outlined in the indicator definitions	
8.1.4. % of local partners' operating budget covered by diverse non-USG funding sources	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes
Percent as of September 30, 2016 (include numerator/denominator)	N/A	N/A	None	Local partners were not officially engaged in APA2. Partners that will be sub granted in the CTB support mechanism in APA3 will be requested to provide information on non USG funding for their operational budget using the CTB questionnaire. Activities in Year 2, will entail tracking of this indicator.	This indicator measures the proportion of CTB project local partners' operating budgets covered by non-USG funding sources. Please send copies of completed special questionnaires with collected relevant country level data among CTB local partners to your PMU M&E Officer.
8.2.1. Global Fund grant rating	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes
Score as of September 30, 2016	A2	N/A	Substantial	The CTB will contribute to a better country GF rating; intervention areas supported through CTB are complementary to GF activities. Activities such as support supervision, performance reviews, DHIS2 support will have a strong bearing.	Provide the score for every active TB grant in country based on the following: A1 Exceeds expectations A Good performance A2 Meets expectations B1 Adequate B2 Inadequate but potential demonstrated C Unacceptable

9.1.1. Number of stock outs of anti-TB drugs, by type (first and second line) and level (ex, national, provincial, district)	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes
Number as of September 30, 2016	0	0	None	GF and other USG funding mechanisms have invested in country support for TB medicines logistics and supply management.	This indicator should be used to report the number of stock outs of any type of TB drug at any level of the health system that results in interruption of treatment.
10.1.4. Status of electronic recording and reporting system	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes
Score as of September 30, 2016	2	N/A	Substantial	Through CTB support, an electronic District Health Information Software Version 2 (DHIS2) and has been rolled out to all districts, city health departments, provincial health offices and MoHCC national office. MoHCC has taken paradigm shift from the various disease specific patient electronic systems to implement one integrated system which is already being piloted in one province.	Provide relevant score in line with the indicator definition as presented in CTB M&E framework.

10.2.1. Standards and benchmarks to certify surveillance systems and vital registration for direct measurement of TB burden have been implemented	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes
Yes or No as of September 30, 2016	Yes	N/A	None	Standards and benchmarks assessment were conducted in May 2016 as part of the Epi-assessment prior to the external NTP review	If assessed, please share a copy of the report/document assessing the status of relevant standards and benchmarks with your PMUE M&E Officer. In the additional comments column, include the country standards and benchmarks score (and year of completion) if an assessment was done.
10.2.6. % of operations research project funding provided to local partner (provide % for each OR project)	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes
Percent as of September 30, 2016 (include numerator/denominator)	N/A	71% (26,171/36,991)	Moderate	Very few TB operations research studies have been conducted in-country in the past, yet this is a very important component that informs evidence based interventions.	This indicator measures the proportion of CTB-supported operations research project funding provided to local partner(s), by each OR project.
10.2.7. Operational research findings are used to change policy or practices (ex, change guidelines or implementation approach)	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes

Yes or No as of September 30, 2016	N/A	0	None	No studies were used to inform any policy change or practices.	Under additional information (Column E), please present relevant information for each individual project. Please send relevant special reports with qualitative details to your PMU M&E Officer.

11.1.3. Number of health care workers trained, by gender and technical area	CTB APA 2		CTB APA 2 investment	Additional Information/Comments	Notes
			Substantial		Please note that HCWs includes health facility staff, community health volunteers, laboratory staff, sputum transport technicians, and community-based DOTS workers. Below, please give disaggregated data by gender and sub-objective. Training includes any in-person, virtual, or on-the-job training that is longer than half a day and for which curriculum is available. This indicator is interchangeable with 'Number of individuals trained in any component of the WHO Stop/End TB Strategy with USG funding', which USAID missions may have as a requirement for internal agency reporting.
	# trained males APA 2	# trained females APA 2	Total # trained in APA 2	Total # planned trainees in APA 2	
1. Enabling environment	17	18	35		
2. Comprehensive, high quality diagnostics	115	178	293	185	
3. Patient-centered care and treatment	135	359	494	490	
4. Targeted screening for active TB	15	8	23	25	
5. Infection control			0		
6. Management of latent TB infection			0		
7. Political commitment and leadership			0		
8. Comprehensive partnerships and informed community involvement			0		
9. Drug and commodity			0		

management systems					
10. Quality data, surveillance and M&E	415	513	928	525	
11. Human resource development					
Other (explain)			0		
Other (explain)			0		
Grand Total	697	1,076	1,773	1,225	
11.1.5. % of USAID TB funding directed to local partners	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes
Percent as of September 30, 2016 (include numerator/denominator)	N/A	5% (302,308 /5,997,824)	Moderate	These local partners are not yet formally engaged. The funding disbursed was as follows:- BRTI (targeted screening - $276,137) OPHID Trust - $26,171	This indicator measures the proportion of CTB annual funding directed to local partners.

Number and percent of cases notified by setting (i.e. private sector, prisons, etc.) and/or population (i.e. gender, children, miners, urban slums, etc.) and/or case finding approach (CI/ACF/ICF) (3.1.1)							
		Reporting period					CTB APA 2 investment
		Oct-Dec 2015	Jan-Mar 2016	Apr-Jun 2016	Jul-Sept 2016	Cumulative Year 2	
Overall CTB geographic areas	TB cases (all forms) notified per CTB geographic area *(List each CTB area below - i.e. Province name)*						

	Provinces					
	Bulawayo city & central hospitals	460	465	409		1,334
	Chitungwiza	218	56	46		320
	Harare city & central hospitals	1,009	1,313	824		3,146
	Manicaland	622	625	585		1,832
	Mashonaland Central	444	532	436		1,412
	Mashonaland East	558	584	612		1,754
	Mashonaland West	710	751	675		2,136
	Masvingo	910	826	819		2,555
	Matabeleland North	511	581	507		1,599
	Matabeleland South	579	557	542		1,678
	Midlands	904	848	731		2,483
	Total	**6,925**	**7,138**	**6,186**		**20,249**
	% of national cases notified in CTB geographic areas	100%	100%	100%		100%
Intervention (setting/population/approach)						
Children (0-14)	CTB geographic focus for this intervention				National	
	TB cases (all forms) notified from this intervention	405	390	391		1,186
	All TB cases notified in this CTB area (denominator)	6,925	7,138	6,186		20,249
	% of cases notified from this intervention	6%	5%	6%		
	CTB geographic focus for this intervention				National/ Prisoners	

Reported by prisons	TB cases (all forms) notified from this intervention	40	51	43		134	
	All TB cases notified in this CTB area (denominator)	6,925	7,138	6,186		20,249	
	% of cases notified from this intervention	1%	1%	1%			
Active case finding (ACF) (e.g. case finding among key populations in the community)	CTB geographic focus for this intervention	National/Miners				0	
	TB cases (all forms) notified from this intervention	137	145	150		432	
	All TB cases notified in this CTB area (denominator)	6,925	7,138	6,186		20,249	
	% of cases notified from this intervention	2%	2%	2%		2%	
Active case finding (ACF) (e.g. case finding among key populati	CTB geographic focus for this intervention	Contact investigation					
	TB cases (all forms) notified from this intervention			1		1	
	All TB cases notified in this CTB area (denominator)			Not yet available		Not yet available	
	% of cases notified from this intervention						

ons in the commun ity)							

Year/Quarter	Number of pre-/XDR-TB cases started on BDQ nationwide	Number of pre-/XDR-TB cases started on DLM nationwide	CTB APA 2 investment	Additional Information/Comments	Notes
Total 2014	N/A	N/A			The number of pre-XDR and XDR-TB patients started on bedaquiline/delamanid during the reporting period as a part of the patient's treatment regimen.
Total 2015	N/A	N/A			
Jan-Mar 2016	N/A	N/A			
Apr-Jun 2016	N/A	N/A			
Jul-Aug 2016	N/A	N/A			
To date in 2016	0	0			

Annex II: Status of EMMP activities

(a) Year 2 Mitigation Measures	(b) Status of Mitigation Measures	(c) Outstanding issues to address in Year 3	Additional Remarks
Education, technical assistance, training, etc. Education, technical assistance and training about activities that inherently affect the environment include discussion prevention and mitigation of potential negative environmental effects.	N/A	Nil	There were no educational and training activities that had any reportable adverse impact on the environment.
Public health commodities **Activities** CTB will procure laboratory reagents from certified suppliers and ensure minimum bio-safety measures are adhered to during transportation, delivery, storage and use. NTP will be responsible for proper distribution and storage. However, CTB will work with NTP to ensure proper transportation and storage based on the information provided by manufacturers. The National regulations i. e. the Hazardous substances act will be strictly adhered to.	CTB ensured that laboratory reagents were procured from certified suppliers and minimum bio-safety measures were adhered to during transportation, delivery, storage and use in compliance with national regulations i. e. the Hazardous substances act. Fumigation and servicing of the biosafety cabinets was conducted by certified service providers.	Nil	Nil

(a) Year 2 Mitigation Measures	(b) Status of Mitigation Measures	(c) Outstanding issues to address in Year 3	Additional Remarks
For any laboratory reagents/chemicals, CTB will check the standards and regulations of health facilities using these products. CTB will advise users on proper storage, use and disposal of these chemicals. Fumigation of biosafety cabinets is performed with toxic chemicals such as, Formaldehyde, Chlorine Dioxide and Hydrogen Peroxide. The directorate of laboratory services will ensure that a certified professional who undertakes fumigation of the biosafety cabinets should have appropriate education and authorization through his or her own company (hired to service the cabinets).			
Medical waste **Activities** MoHCC will assume responsibility for waste management. However, while CTB is not fully responsible for waste management within the health facilities they support, they will ensure the following: • The training curriculum supported by CTB for the DRS and Xpert installations will incorporate best management practices for proper handling, use and disposal of medical waste. MoHCC shall apply appropriate infection control measures as outlined in the national infection control policy (developed in line with the WHO guidelines). The national Infection Control Policy incorporates appropriate health and safety measures as well as environmental safeguards for proper disposal of medical waste. Infection control will also be incorporated in the support and supervision checklist for the NTP. The riders were trained in proper handling of hazardous samples. Riders for health (a partner implementing	In the trainings on DRS and Xpert MTB/RIF installations conducted in APA2, there was a comprehensive module on waste management which incorporated waste management practices for proper handling, use and disposal of medical waste. During the outreach visits for targeted screening for active TB, bio-safety measures were ensured through provision of sharps containers and bio-hazard bags for proper disposal of used sharps as well as infectious waste respectively. These were packaged and ferried to hospitals for safe disposal. The checklist for routine support and supervisions included a section on infection control and no adverse events were recorded.	Nil	Nil

(a) Year 2 Mitigation Measures	(b) Status of Mitigation Measures	(c) Outstanding issues to address in Year 3	Additional Remarks
transporting system for sputum collection) will monitor and report adverse events resulting from handling of laboratory specimens.	The riders were trained in proper handling of hazardous samples. Riders for health (a partner implementing transporting system for sputum collection) monitored for adverse events resulting from handling of laboratory specimens. No adverse events were reported.		
Small-scale construction The renovation plans were approved by the Ministry of Public Works and National Housing (MPWNH) ensuring that mitigation measures are in place to minimize public health nuisance. The renovations are continuing from APA1 and are being done by private contractors. The construction activities will be conducted in adherence to the principles of environmentally sound renovation as provided in the Small Scale Construction chapter of the USAID Environmental Guidelines for Small-Scale in Africa. For example, no lead paint will be used and excess materials will be disposed of in an environmentally sound manner. The MPWNH, CTB and NTP will conduct regular site inspections to ensure the public health standards are met in line with the Public Health Act of Zimbabwe and USAID minimum requirements. Should the contractor deliberately violate any of the minimum requirements CTB will terminate the contract.	In APA2 CTB supported minor renovations to facilitate installations of two X-Ray machines and a HAIN machine (carried over from APA1). These were subcontracted to private contractors. During the renovations CTB Officers conducted regular visits to ensure that the minimum environmental requirements were met. There was no environmentally adverse material used and excess material was collected and disposed of in designated landfills routinely monitored by the Environmental Management Agency (EMA).	Nil	Nil
5. Small-scale water and sanitation	Nil	Nil	Nil